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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,010	12/12/2003	Myoungho Lim	9587-0004/LGC-0003	2348

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EXAMINER	
BERHANU, SAMUEL	
ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 02/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/735,010	LIM ET AL.	
	Examiner	Art Unit	
	Samuel Berhanu	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 November 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6-10,13,19,24-28 and 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-10,13,19,24-28 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 6, 7 and 8 recite the limitation "Controlling" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Stuart (US 5,844,399).

Regarding Claims 1 and 19 are Stuart discloses in Figures 1 and 5 a method for managing a battery system comprising: using a solid state relay as a switch (Q1, Q2) during an operation of said battery system, and wherein said operation is a buck (13) and wherein said switch (Q2) completes a circuit comprising: a first side of a battery cell (+), a resistor (2Ω); and a second side of a battery cell (-) (Column 4, lines 22-38).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 6 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stuart (US 5,844,399) in view of Kitahara et al. (US 6,121,752).

Regarding Claims 6 and 24, Stuart does not disclose explicitly, a controlling said battery system using a logic circuit. However, Kitahara et al. disclose, a controlling said battery system using a logic circuit (Figure 9, element 451, Column 15, lines 30-32). It would have been obvious to a person having ordinary skill in the art at the time of the invention to use a logic circuit as a control means in Stuart's battery charge control system as taught by Kitahara et al. in order to provide onboard control means and eliminate external control means and also to use a common clock signal to enable and disable the control operation.

6. Claims 7 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stuart (US 5,844,399) in view of Adachi (US 5,350,951)

Regarding Claims 7 and 25, Stuart does not disclose a controlling said battery system using an EPROM. However, Adachi discloses in Figure 3, EPROM as a control circuit (Column 1, lines 28-30). It would have been obvious at the time of the invention to use an EPROM as a control means in Staurat charging apparatus as taught by Adachi in order to provide a flexible and designable control means; and also on EPROM complex control program and compaction instruction are implemented.

7. Claims 8 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stuart (US 5,844,399) in view of Prater (US 5,574,633).

Regarding Claims 8 and 26, Stuart does not disclose explicitly, controlling said battery system using a programmable logic array. However, Prater discloses in Figure 3 and 4, programmable logic array (PLA) as a control means (Column 6, lines 9-14).). It would have been obvious at the time of the invention to use PLA as a control means in Staurat charging apparatus as taught by Prater in order to monitor battery energy level effectively.

8. Claims 9 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stuart (US 5,844,399) in view of Sakurai (US 6,340,889).

Regarding Claims 9 and 27, Stuart does not disclose explicitly, a control circuit that controls said switch protected from a higher voltage circuit wherein said switch is a component of said high voltage circuit. However, Sakurai discloses, wherein a control circuit (6) that controls said switch (12,13) protected from a higher voltage circuit (15,17) wherein said switch is a component of said high voltage circuit (Column 5, lines 31-63). It would have been obvious at the time of the invention to use a control circuit in Staurat charging apparatus as taught by Sakurai in order to control the switch from unintentional power source or energy level of external circuit.

9. Claims 10, 13, 28 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawashima (US 6,459,236) in view of Ruhling (US 5, 469, 042).

Regarding Claim 10, Kawashima discloses in Figure 3 a method of managing a battery system comprising: providing a first rail (Positive and Negative terminal of CE1); and providing a second rail (Positive and Negative terminal of CE2).

providing a first switch (S11) connected to a high line of said first rail (positive terminal of CE1); providing a second switch (S21) connected to a low line of said first rail (negative terminal of CE1); providing a third switch (S12) connected to a high line of said second rail (positive terminal of CE2); providing a fourth switch (S31) connected to a low line of said second rail (negative terminal of CE2);

However, Kawashima does not disclose explicitly, partitioning a first battery cell into a first battery group partitioning a second battery cell into a second battery group wherein said second battery cell is in series with said first battery cell (Each accumulators are in series with each other) and wherein a first side of said first battery cell is electrically connected to a first side of said second battery cell; and accessing said first side of said first battery cell (24) and a second side of said first battery cell using said first rail (25). However Ruhling discloses in Figuer 1, partitioning a first battery cell into a first battery group partitioning a second battery cell into a second battery group wherein said second battery cell is in series with said first battery cell (Each accumulators are in series with each other) and wherein a first side of said first battery cell is electrically connected to a first side of said second battery cell; and accessing said first side of said first battery cell (24) and a second side of said first battery cell using said first rail (25). It would have been obvious at the time of the invention to use a partitioning means as taught by Ruhling in Kawashima's circuit in order to control each battery cell or group of cells independently and to avoid indiscriminate battery charging and discharging

Regarding Claim 28, Kawashima discloses in Figure 3 a method of managing a battery system comprising: providing a first rail (Positive and Negative terminal of CE1); providing a second rail (Positive and Negative terminal of CE2);

a first switch (S11) connected to a high line of said first rail (positive terminal of CE1); a second switch (S21) connected to a low line of said first rail (negative terminal of CE1); a third switch (S12) connected to a high line of said second rail (positive terminal of CE2); a fourth switch (S31) connected to a low line of said second rail (negative terminal of CE2); However, Kwashima does not disclose explicitly, a partitioning unit configured to partition a first battery cell into a first battery group wherein said partitioning unit is further configured to partition a second battery cell into a second battery group wherein said second battery cell is in series with said first battery cell and wherein a first side of said first battery cell is electrically connected to a first side of said second battery cell; and a control unit configured to access said first side of said first battery cell and a second side of said first battery cell using said first rail. However Ruhling discloses in Figure 1, a partitioning unit configured to partition a first battery cell into a first battery group wherein said partitioning unit is further configured to partition a second battery cell into a second battery group wherein said second battery cell is in series with said first battery cell (Each accumulators are in series with each other) and wherein a first side of said first battery cell is electrically connected to a first side of said second battery cell; and accessing said first side of said first battery cell (24) and a second side of said first battery cell using said first rail (25). It would have been obvious at the time of the invention to use a partitioning means as taught by

Ruhling in Kawashima's circuit in order to control each battery cell or group of cells independently and to avoid indiscriminate battery charging and discharging.

Regarding Claim 31, a second control (21) configured to access said first side of said second battery cell (25) and a second side of said second battery cell (24) using said second rail (27) (the reason noted above).

Response to Arguments

10. Applicant's arguments with respect to claims 1-36 have been considered but, except as to Stuart, are moot in view of the new ground(s) of rejection.

Applicant's arguments regarding Stuart considered but it is not persuasive. Applicant argues Stuart doe not show that the resistor is directly connected to the switch. This is not correct.

Stuart discloses in Figure 5 that the 2Ω resistor is directly connected to the switch Q2 at point F, as noted above.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB

KARL EASTHOM
SUPERVISORY PATENT EXAMINER